

U.S. Fish and Wildlife Service

Providing Technical Guidance for the Great Lakes' AOCs :
Degradation of Habitat and Populations BUIs

If you build it will they come? And then what?

USFWS Mandy Annis





USFWS Mission Statement:

- The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.



Photos by USFWS

USFWS Technical Guidance: Areas of Concern



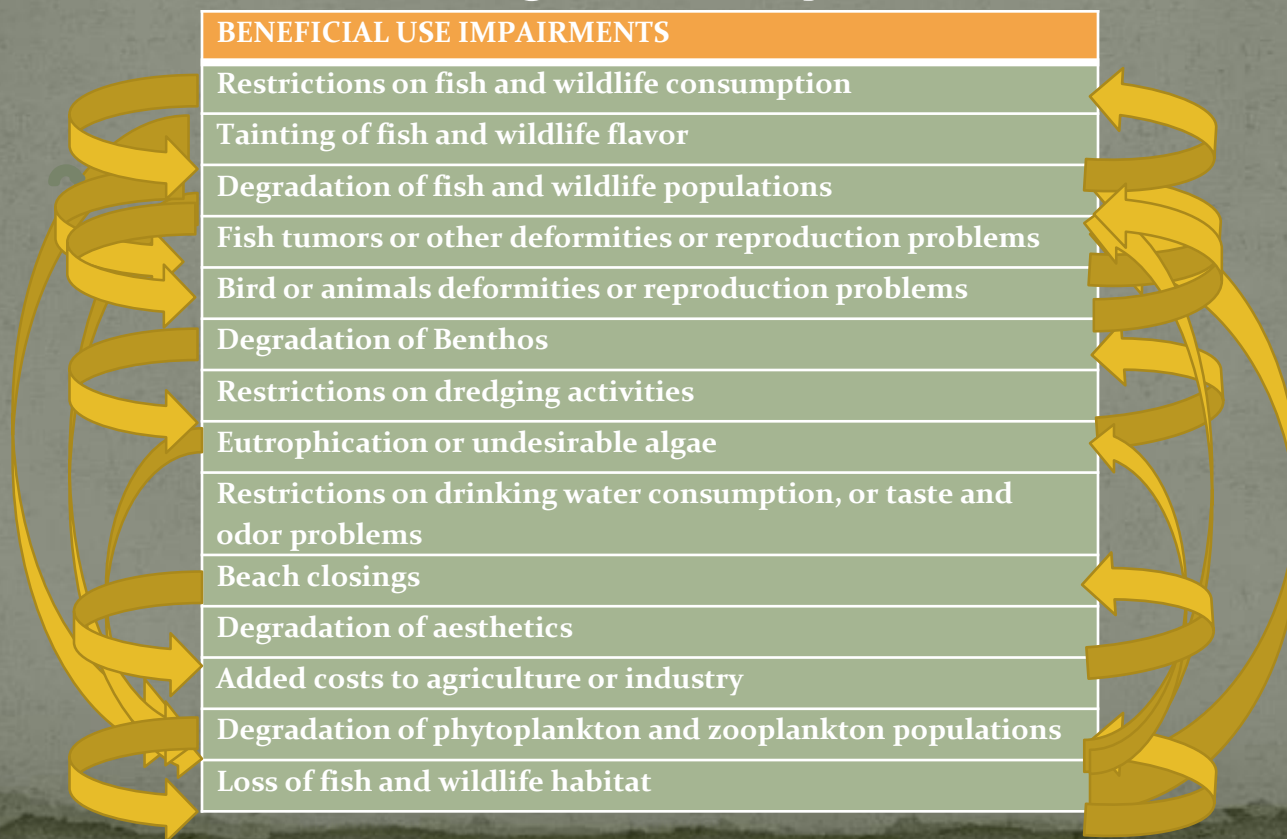
- Set Meaningful and Attainable Goals
- Monitor/Evaluate Restoration
 - Provide Science to Inform Removal
- Provide Recommendations





Linking BUIs

- Does linking the BUIs make sense for the AOC?
- Does linking BUIs align with ecosystem needs?
- Science and Monitoring is the Key!



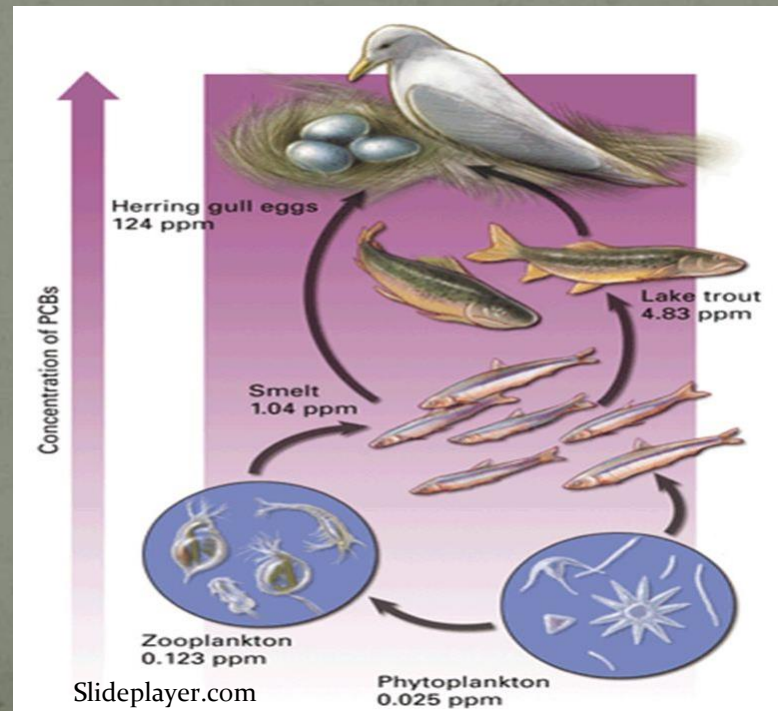
BUI Interactions

- Habitat and Population BUIs considered together: If you build it will they come? And then what?
 - Habitats = Healthy Populations?
 - What does the science say?

Will providing habitat to prey species increase predatory fish and birds populations?

Are the prey species supportive of predatory fish?

Are the plankton communities supportive of the prey fish?



Are habitats supportive of predatory birds and fish?

Are fish and wildlife able to maintain population size and structure at all levels?

Does the habitat support diverse species?



Sinks or Self Sustaining?

- You built it and they came. But now what?
- Are “they” healthy and self-sustaining?
 - Population Sink?
- AOC specific
- Science and monitoring is key!





Case Study: Saginaw Bay/ River AOC

- Worked with State, Federal, Public Action Committees (PACs) and other local groups to:
 - Understand Unique AOC Challenges and Attributes
 - Habitat BUI removed
 - Science suggests population sinks
 - Populations BUI considered with Bird and Animal Deformities and Reproduction Problems
 - Monitor and Evaluate!





Monitoring/Evaluating Saginaw

- Research supported by USFWS with GLRI funds:
 - Keith Grasman/Calvin College colonial waterbird research
 - Jim Ludwig vitamin analyses in cormorants
 - MDNR bald eagle productivity flights
 - Bush and Bohr/ MDEQ 2012, 2015 wildlife deformity/reproductive BUI evaluations
 - Herring gull egg & environmental contaminant levels
 - Evaluation of fish contaminants and dam removal



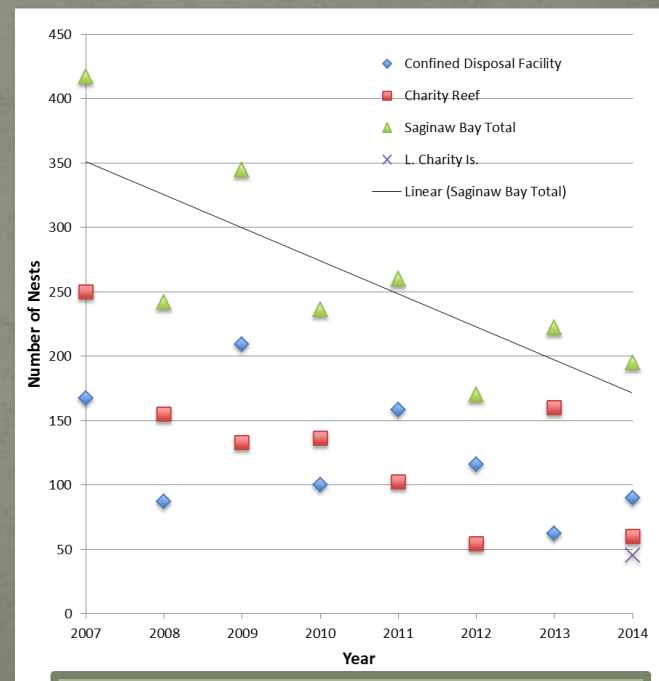


Population Sink-Caspian Terns

- We built it, they came, but they did not maintain their population.
 - **Mora et al. 1993**
 - Banded birds had low return rates in Saginaw Bay breeding grounds
 - **Grasman et al. 2015**
 - Populations trends decreasing
 - Reduced reproductive success
 - Immuno-suppressed



USFWS



Caspian tern nests observed in Saginaw Bay 2007-2014, Grasman et al. 2014



Recipe for Success

- Understand the unique challenges and attributes of your AOC
- Provide meaningful and attainable goals
 - Does linking BUIs make sense for my AOC?
- Science and monitoring-repeat, repeat, repeat!
- Success=healthy self sustaining fish and wildlife populations



U.S. Fish and Wildlife Service AOC Coordinators

Minnesota: Zach Jorgenson-(952)-252-0092 Ext. 247

Wisconsin: Steve Choy-(608)-238-9333, Ext. 131

Indiana: Will Tucker-(812)334-4261, Ext. 1218

Michigan: Mandy Annis-(517)-351-8318

Ohio: Jo Ann Banda- 614 416-8993, Ext. 19

New York: Amy Roe-(607)-753-9334

